



The Programmer's Online Companion

Apple IIgs[®]

Steve Capps

Apple IIgs translation by Byte Works, Inc.

The Programmer's Online Companion

Apple IIcs
Version 1.0

User's Guide

Steve Capps

Apple IIcs Translation by The Byte Works, Inc.



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Introduction

The Programmer's Online Companion is a RAM-resident database reference utility for Apple IIcs programmers. It is designed to eliminate most of the simple, but time-consuming, references to the *Apple IIcs Toolbox Reference* manuals*. The program provides online access to the Apple IIcs Toolbox calls, constants, and types through a few simple keystrokes. A programmer need not search through files or books just to check a parameter sequence or the spelling of a toolcall. The Programmer's Online Companion consists of two parts: a desk accessory program and an extensive database that install themselves in memory at boot time. Once installed, the Programmer's Online Companion waits to be summoned at any time from any program that allows access to the desk accessory menu, providing a quick reminder of virtually any item from the Apple IIcs Toolbox.

It is important to understand that the Programmer's Online Companion was developed to augment, not replace, the *Apple IIcs Toolbox Reference* manuals. It is not a teaching tool but rather a crib sheet for programmers. The structure of the Programmer's Online Companion assumes that the user has a basic knowledge of Pascal, C, or assembly language; the Apple IIcs Toolbox; and the Apple IIcs itself.

* *Apple IIcs® Toolbox Reference: Volume 1*, and *Apple IIcs® Toolbox Reference: Volume 2*, copyright © 1988 by Apple Computer, Inc. Published by Addison-Wesley Publishing Company, Inc. All Rights Reserved.

Installation

The Programmer's Online Companion is a Classic Desk Accessory. As such, it is available from any program that allows access to Classic Desk Accessories and uses ProDos 16.

You can install the Programmer's Online Companion on your hard disk, or onto any other disk you boot from. As shipped, the program requires about 150K of storage space on your floppy or hard disk, and the same amount of RAM above your development system to operate (modifying the database may increase or decrease the amount of space required).

To install the program using a text-based system, copy the files COMPANION and POC.DB from the directory /POC/SYSTEM/DESK.ACCS to the desk accessory directory on your other boot disks or hard disks. For instance, if the name of your boot disk is BOOT, type /BOOT/SYSTEM/DESK.ACCS/COMPANION (or /BOOT/SYSTEM/DESK.ACCS/POC.DB) to copy the file into your directory. If you are using the Apple IIgs desktop, move the COMPANION and POC.DB icons into the desk accessory folder (DESK.ACCS) in your System folder.

After the Programmer's Online Companion is installed, simply boot as usual and the program will always be available through the desk accessory menu. To remove Programmer's Online Companion, just delete it from the desk accessory directory on your boot disk, or remove the icons from the desktop.

Order of Descriptions

The Programmer's Online Companion uses a variety of commands to access and search the database and copy information into an underlying editor screen. The database is organized alphabetically first by toolset, and then by each tool within that toolset.

Each toolset entry starts with the constants and types for that toolset, and then moves on to the toolcalls. Each database entry (toolset name, constant, type or toolcall) is a "keyword." Each toolcall entry is followed by its C and Pascal declarations and a brief description of its function. Every toolsets' constants are identified by an entry called "constants," and its types are identified by an entry called "types," making it easier for you to search directly for specific parts of a toolset. A keyword search of the entries makes it fast and easy to move from one call to another. Each of these commands is fully described in the following sections.

The methods for searching and moving through the database are divided into three sections: Searching the Programmer's Online Companion Database (Searching for an Exact Toolbox Call [Keyword], Searching for a Partial Keyword, Searching for a General Text String, and Standard Search Commands); Scrolling Through the Database (Linear Jumps, Scrolling Entry by Entry, Scrolling Line by Line, Scrolling Word by Word); and Copying the Data (Copying an Entry, Copying a Definition, and Copying General Text). The final section describes how to modify the database. Also, for quick reference, see the complete command summary on page 21.

Accessing the Online Companion

To get to the Programmer's Online Companion, hold down the **⌘** and **Control** keys, and press the **Esc** key. You will see a desk accessory menu with "Programmer's Online Companion" listed as one of the items. Use the up and down arrow keys to select this line, then press **Return**.

⌘ Control Esc Access the desk accessory menu

The first time you access the Programmer's Online Companion in a work session, you will see a splash screen showing the copyright notice, version number, and authors. This stays up while the database file is loading, and then vanishes on its own. You will not see this screen again until you reboot the computer.

Once the database is loaded, the program shows you the first screen of entries and waits for your commands. You can search the database quickly by complete keywords (toolbox calls), partial keywords, or by any text string contained in the file. You can also scroll through the database without performing a search. These commands are described below.

When you are in the Programmer's Online Companion, two commands are particularly important. The **Esc** key exits to the desk accessory menu. To return to your development system, select "Quit" from the desk accessory menu and press the **Return** key. You can also use **⌘ Q** to leave Programmer's Online Companion.

The ⌘ ? command displays the help screen, which lists each of the keyboard commands and gives a short explanation of what the command does. Use the **Return** key to return to the program from the help screen.

Esc	Return to the desk accessory menu
⌘ ?	Display the help screen
⌘ Q	Return to editor screen

Searching the Database

Searching for an Exact Toolbox Call (Keyword)

If you know the exact name of the call you would like to see, you can quickly locate it by using ⌘ K, which initiates a forward dictionary search through the database; **Option K** searches backward through the file. Either command summons a search box with a cursor prompt. Type the name of the toolbox call you want to find and press the **Return** key. (It does not matter if you use upper- or lower-case letters.) The program locates the corresponding entry and places its first line at the top of the screen. If the entry does not appear in the database exactly as you typed it, a "String not found" message appears. **Esc** makes the box disappear without initiating a search.

The ⌘ K command starts its search with the entry after the one the cursor is on and moves toward the end of the file. If the search string is not found, it then starts at the beginning of the file and searches forward until the string (or original cursor position) is reached. **Option K** searches from the cursor backward to the start of the file, then moves to the end of the file and scans backward until the string (or original cursor position) is reached.

⌘ K	Search forward for a keyword
Option K	Search backward for a keyword

Searching for a Partial Keyword

If you want to search for a keyword, but aren't sure of its precise spelling, you can conduct a partial search by typing in the piece of the keyword you know and = (equal sign). For example, if you are searching for Window2, but aren't sure if there is a space before the number, you could type Win= and the search will be conducted for all keywords with that prefix. The = key can be used on either or both ends of the partial keyword. Typing =win= would look for all entries that include the text "win" anywhere in the keyword.

(text) =	Search for a partial keyword (prefix)
= (text)	Search for a partial keyword (suffix)
= (text) =	Search for a partial keyword (anywhere)

Searching for a General Text String

The ⌘ F command allows you to search forward for any text string in the file; Option F searches backward from the current cursor position. While the dictionary search described above is the fastest method, it is limited to searching for words that have been entered in the database as keywords. Because the general text string search must expand the compacted text of the database as it goes, it takes considerably longer than a keyword search, but it is useful for searching for parameters and other file information.

⌘ F	Search forward for any text string
Option F	Search backward for any text string

Line Editing Commands for Searches

While you are entering your character string in any search box, the standard line editing features made popular by AppleWorks™,

APW, and ORCA/M™ are available. These features are summarized below.

Because the ⌘ K and Option K commands work only if you type the exact characters and spacing of the toolbox call, it is wise to press ⌘ Y to clear the search box before typing a new command.

⌘ Y	Delete characters right to the end of the line
-----	--

If you want to search for text already typed, press Return, even if the cursor is at the beginning of the search box.

Return	Search for the character string typed
--------	---------------------------------------

The default search text entry mode is overstrike, in which new characters replace the ones the cursor is on. If you are in overstrike mode, ⌘ E places you in insert mode, in which old text is moved to make room for the new characters typed. Using this command again returns you to overstrike mode.

⌘ E	Toggle between overstrike and insert mode
-----	---

⌘ combined with > and < move the cursor to the end or beginning, respectively, of the character string. The Arrow keys (left, right, down, and up) allow you to move around in the text one character at a time without deleting.

⌘ >	Move to the end of the current string
⌘ <	Move to the beginning of the current string
Arrow keys	Move the cursor without deleting text

The Delete key deletes the character to the left of the cursor; characters to the right of the cursor move to the left.

Delete	Delete the character to the left of the cursor.
--------	---

⌘ Z is an "undo" command. It removes all changes to the search text, restoring the search string that was present when the search command was invoked.

⌘ Z Undo all changes

If you decide to exit search mode without executing a search, the Esc key returns you to the program, leaving the search string unchanged.

Esc Exit to the program

Scrolling Through the Database

Linear Jumps

When you type the ⌘ key with number keys 1 through 9, the program jumps quickly to one of nine evenly spaced, predetermined points in the database. The ⌘ 1 command moves to the first entry; ⌘ 9 moves to the top of the last entry. Pressing any one of the other keys moves about one eighth of the way through the file. These commands are useful for large moves; note, however, that ⌘ 0 is invalid.

⌘ 1	Move to the first entry in the database
⌘ 9	Move to the last entry in the database
⌘ 2-8	Move quickly through the entries

Scrolling Entry by Entry

Another method of moving through the Programmer's Online Companion database is by scrolling. The ⌘ E command moves the cursor to the next entry; Option E moves to the previous entry. Both commands place the first line of the entry at the top of the screen.

⌘ E	Move to the next entry
Option E	Move to the previous entry

Scrolling Line by Line


The **Left**, **Right**, **Down**, and **Up Arrow** keys are used to move the cursor around the screen without changing the text. If you attempt to move off the screen and there is more information in that direction, the screen automatically scrolls one line at a time. If you are at the start or end of the file, the screen stops scrolling.


Arrow keys Move the cursor through the text



The **Return** key is also used to move through the file. It moves the cursor to the start of the next line, scrolling the screen if necessary.


Return Scroll line by line through the file


Scrolling Word by Word

If you hold the  key down while typing an **Arrow** key, the **Arrow** key's function changes. The **Left** and **Right Arrow** keys move forward or backward to the next or previous word. (This is referred to as word tabbing in most text editors.)

The **Up Arrow** key combined with  moves the cursor to the top of the page. If the cursor is already on the top line of the page, the text scrolls one screen (24 lines) toward the start of the file. If you continue to scroll up page by page, the cursor remains at the top of the screen. If you are within 24 lines of the start of the database, the screen scrolls to the beginning of the database and remains there.



The **Down Arrow** key with  works in a similar manner. If the cursor is in the middle of the screen,  **Down Arrow** moves it to the bottom of the screen. If the cursor is already there, the display scrolls one screen at a time toward the end of the file.




 **Left/Right Arrows** Word tabs


 **Up/Down Arrows** Page scrolls

Copying the Data


Copying an Entry

Pressing  **C** copies all of the text from the entry the cursor is currently in. The entry is defined as all of the text starting at the keyword above the cursor, including the **C** or Pascal declarations and explanatory text, and continuing to the first character of the following entry. The  **C** command can be used to copy an entire toolbox call, along with its description, which can be used as a comment in your source code.

If the scrap manager is active when the  **C** command is used, the information is copied to the scrap manager, where desktop programs can copy the entry into an editor (through the **Edit** menu or using  **V**). If the scrap manager is not active, such as in **APW** or **ORCA/M**, the information is copied to **3/SYSTEMP**, where it can be pasted into the editor (using  **V**).

 **C** Copy the current entry in its entirety

Copying a Declaration

Each entry in the database is accompanied by two declarations, one suitable for Pascal, the other for **C**. If you place the cursor at the start of a declaration and press  **D**, the declaration is copied. All extraneous text is removed, so that the copied information becomes

a template for use in a program. Simply paste the definition into your program and replace the names of the parameters (if any) with the appropriate identifiers or expressions. If you want to comment out your code with explanatory text, use the command for "Copying General Text," described below.

⌘ D Copy a declaration (high-level language call)

Copying General Text

The ⌘ X command places you in selection mode. In this mode, you can use the **Arrow** keys and ⌘ **Arrow** keys to select the text you want to copy. All text from your starting point to the current cursor position is selected and shown in inverse. Pressing **Return** when the cursor is at the end of the selection copies the text to the scrap manager or 3/SYSTEMP file, as described above. (If you get a "cannot open file" message, make sure your Programmer's Online Companion disk is unlocked.) At any time, the **Esc** key can be used to cancel the selection.

⌘ X Copy selection

Modifying the Database

If you would like to modify the database, you can do so by first using the EXPAND utility, described below, to change the database into a standard ASCII file. After making the changes, use the COMPRESSF utility, also described below, to create a database from your modified file.

The EXPAND utility is designed to run from the APW-ORCA/M shell. On the Programmer's Online Companion disk, the Expand program has this location: /POC/UTILITIES/EXPAND. Once you have entered the shell, move to the prefix where the EXPAND program is located, and type:

EXPAND databasefile textfile

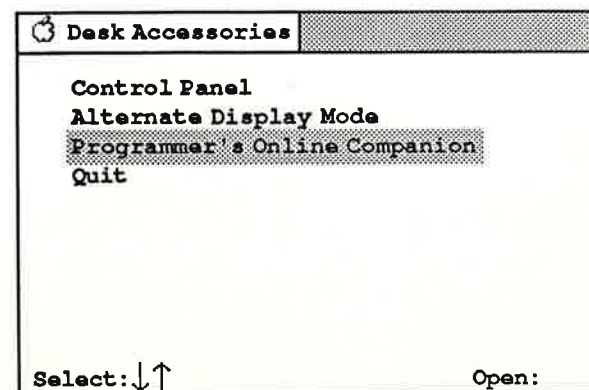
where databasefile is the name of the database file (/POC/SYSTEM/DESK.ACCS/POC.DB) and textfile is the name of the ASCII file you want the program to create. Allow for about twice the disk space as that occupied by the database file.

You will see that in the expanded file the names of each toolbox call are marked with a pair of "!" and "\" characters. These characters *cannot* be used in the database text for *any* purpose other than marking a dictionary entry. They must appear in pairs and, for the database to work as designed, they should be used *only* to mark the names of the toolbox calls.

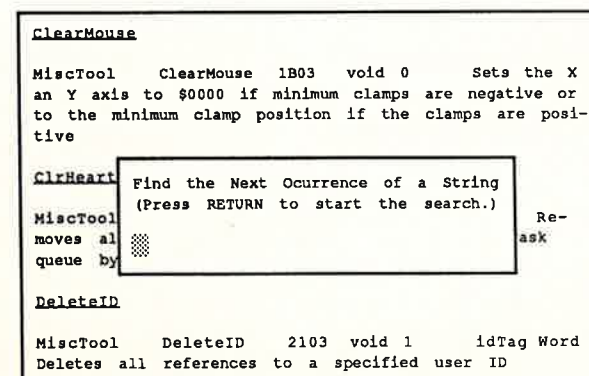
Save your changes to the database, then use the COMPRESSF program to create a new database file, calling the COMPRESSF program in the same way you called the EXPAND program. On the Programmer's Online Companion disk, COMPRESSF is at the location /POC/UTILITIES/COMPRESSF. The compressed file must be called POC.DB and must be in the desk accessory prefix of the system directory in order for the Programmer's Online Companion to find it.

Again, the parameters are a pair of file names. This time, though, the first is the name of the ASCII file, and the second is the name of the database file. For example, if you named your expanded ASCII file "/POC/SYSTEM/DESK.ACCS/ASCII.DB," you would likely name your compressed file "/POC/SYSTEM/DESK.ACCS/POC.DB" and write over the existing database file with the same name.

Sample Online Display



Desk accessory menu with the Programmer's Online Companion selected.



Online database with keyword search box displayed.

Command Summary

General Commands

⌘ Control Esc	Access the desk accessory menu
⌘ ?	Display the help screen
Esc	Return to the desk accessory menu

Search Commands

⌘ K	Search forward for a keyword
Option K	Search backward for a keyword
(text) =	Search for partial keyword (prefix)
= (text)	Search for partial keyword (suffix)
= (text) =	Search for partial keyword (anywhere)
⌘ F	Search forward for any text string
Option F	Search backward for any text string

Line Editing Commands for Searches

⌘ Y	Delete characters right to the end of the line
Return	Search for the character string typed
⌘ E	Toggle between overstrike and insert mode
⌘ >	Move to the end of the current string
⌘ <	Move to the beginning of the current string
Arrow keys	Move the cursor without deleting text
Delete	Delete the character to the left of the cursor
⌘ Z	Undo all changes
Esc	Exit to the program

Scroll Commands

⌘ 1	Move to the first entry in the database
⌘ 9	Move to the last entry in the database
⌘ 2 - 8	Move quickly through the entries
⌘ E	Move to the next entry
Option E	Move to the previous entry
Arrow keys	Move the cursor through the text
⌘ Left/Right Arrows	Word tabs
⌘ Up/Down Arrows	Page scrolls

Copy Commands

⌘ C	Copy the current entry in its entirety
⌘ D	Copy a declaration (high-level language call)
⌘ X	Copy selection
⌘ V	Paste in editor screen

**The Programmer's Online Companion
Apple IIGS**

ATTENTION:

Please note that the actual size of the Programmer's Online Companion (program and database) is now 240K. This is due to the fact that the final data licensed from Apple Computer Corporation contained more information than we had anticipated.

While we cannot remove any of the data, you are free to modify the size of the database by altering or deleting some of the explanatory text; or you can alter it in any way you like. You'll want to note the more detailed instructions on page 17 of the documentation.